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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,727	10/10/2006	Yee Min Lim	03989.0011.PC/US00	4968
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EXAMINER				
HARP, WILLIAM RAY				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/582,727

**Applicant(s)**

LIM ET AL.

**Examiner**

William R. Harp

**Art Unit**

3651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 08 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SG/US)  
Paper No(s)/Mail Date 1/8/2009
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Examiner Note***

1. Applicant should note that the art unit and supervisor for the examiner and this application have changed. The new supervisor information is included in this Office Action.

***Information Disclosure Statement***

2. The information disclosure statement (IDS) was submitted on January 8, 2008. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Response to Amendment***

3. Examiner acknowledges the amendment to the claims entered January 8, 2009 in response to a Non-final Office Action mailed August 1, 2008.
4. Claims 1-10 are pending. Claim(s) 1-10 is/are currently amended.
5. Examiner acknowledges the amendment to the specification entered October 29, 2008 in response to a Non-final Office Action mailed August 1, 2008.

***Response to Arguments***

6. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (USPN 2181659) in view of Van den Goor (USPN 5667054).

10. Regarding Claims 1 and 2, Johnson teaches a first link block, a second link block, and a plurality of link blocks (as illustrated in Figure 4). Johnson further teaches a first pin, a second pin, and a plurality of pins (15) at the ends of the link blocks, where the pins are parallel to one another (as illustrated in Figure 4). These link blocks and pins form a link assembly. The chain assembly of Johnson is a two-dimensional chain assembly (as illustrated in Figure 2). Johnson fails to teach a first offset bushing or a plurality of offset bushings. Van den Goor teaches a first offset bushing (formed by sleeves 50 and 51 in Figure 9) on a pin (5'); and a link block (2) carrying the first offset bushing, the second link block (3) movable with respect to the first link block upon rotation of the first offset bushing with respect to the second link block. Van den Goor teaches that this arrangement is used for tensioning the transport chain [C7, L42-45]. Van den Goor further teaches that the sleeves can be rotated 180 degrees about the central axis of the pin, which as a result, will bring the ends of links 2 and 3 that are interconnected by the pin towards one another [C7, L50-53]. Therefore, the sleeves are rotated with respect to the second

link, which causes the second link to be moved with respect to the first link. Van den Goor further teaches a plurality of pins, bushings, and link blocks, as described in [C7, L59-61], discussing a multiple pins, links, and sleeves. Further, Figure 1 illustrates a plurality of link blocks and pins; therefore it would be implicit that there would be a plurality of offset bushings. It would have been obvious to use the offset bushings for tensioning of a conveyor chain.

11. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson in view of Van den Goor as applied to claim 2 above, and in view of Tuomikoski (USPN 6241080).

12. Regarding Claim 3, Van den Goor teaches the limitations above, however, fails to teach that the bushing or the pin have conical surfaces. Tuomikoski teaches a joint pin (x in Figure 3) that has a conical surface. The purpose of the conical surface is to optimize the surface pressures and eliminate undesired bending in the chain [C2, L40-43]. The corresponding surfaces of the chain links (1) are also conically shaped. Therefore it would have been obvious to one of ordinary skill at the time of the invention to provide conical surfaces on the bushing and the pin in order to optimize surface pressures and eliminate undesired bending in the chain as taught by Tuomikoski.

13. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson in view of Van den Goor as applied to claim 1 above, and in view of Frost (US Pub 2003/0168323 A1).

14. Regarding Claims 4-6, Van den Goor teaches the limitations above, yet fails to teach a spherical ball bushing on the first pin and that the offset bushing has a spherical opening, as well bushings for supporting the pin.

15. Frost teaches a conveyor chain (10 in Figure 1) with links (12a,b and 14 in Figure 1). A pin (16 in Figure 1) is used to connect the links as illustrated in Figure 1. The pin has a spherical ball member (20 in Figures 1-3) that allows pivotal movement of the center link (14) provides greater flexibility to the chain to negotiate sharper vertical curves [P4, Para. 73]. The center link has a corresponding spherical surface (14b in Figure 3) for engaging the ball member [P4, Para. 72]. Frost teaches [P4, Para. 73] that the ball member and surface distribute the loads over a constant surface area, reducing stress concentrations, decreasing the wear on the chain and increasing the life of the chain. Frost further teaches that a problem encountered in chain links is increased wear due to a lack of lubrication [P1, Para. 3] and teaches that the sleeve portion [P1, Para. 10] may comprise a low coefficient of friction coating.

16. One of ordinary skill would recognize that a coating with a low coefficient of friction would preclude the need for lubrication. It would have been obvious to one of ordinary skill to include a spherical ball bushing and corresponding spherical opening in the offset bushing to decrease the wear on the chain and to negotiate tighter vertical curves. The ball bushing would allow for multi-directional movement as expected. One of ordinary skill would recognize from Van den Goor that the pin is supported by the bushing through both blocks. One of ordinary skill could also have duplicated the bushings, since duplicating the components of a prior art device is a design consideration within the skill of the art. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960). Providing duplicate bushings to support the pin would not affect the performance of the device nor produce any unexpected results; therefore, it would have been obvious to duplicate the bushings to support the pin.

17. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson in view of Van den Goor as applied to claim 1 above, and further in view of Bankauf (USPN 2850149).

18. Regarding Claims 7-10, Johnson in view of Van den Goor teaches the limitations described above, yet fails to teach a guide wheel, a raceway, a slat, slat support member or connectors. Bankauf teaches a guide wheel (10) and a raceway (21). Bankauf teaches a slat (1), a slat support member (2), and connectors (4). It would have obvious to use these elements as is known in the art

***Conclusion***

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William R. Harp whose telephone number is (571) 270-5386. The examiner can normally be reached on Monday - Thursday, 8:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Crawford can be reached on (571) 272-6911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gene Crawford/  
Supervisory Patent Examiner, Art Unit  
3651

/W. R. H./  
Examiner, Art Unit 3651